

Lung Cancer and Month of Birth

LEROY HYDE, M.D., *Long Beach*

P. J. STINSON, PH.D., *Norfolk, Virginia*

■ *A statistical study of possible relationship of month of birth to the occurrence of lung cancer was carried out at Veterans Administration Hospital, Long Beach.*

The distribution of the 200 lung cancer cases by month of birth did not differ significantly from that which might be expected by chance alone. These findings do not substantiate those found by Dijkstra in The Netherlands.

IN A REVIEW of 330 cases of bronchogenic carcinoma seen during a 10-year period in The Netherlands, Dijkstra¹ observed that an inordinately large number of the patients had been born during the winter months, with the peak in March. He also noted that a somewhat larger than expected number had been born in the years 1893, 1897, 1898, and 1900.

The Pulmonary Disease Service at the Veterans Administration Hospital in Long Beach, California, cares for a large number of patients with bronchogenic carcinoma. Data on the most recent 200 consecutive patients (all men) with histologically proved bronchogenic carcinoma seen in the year 1963 were analyzed to investigate the relationship between date of birth and the occurrence of lung

cancer. The subjects ranged in age from 32 to 80 years with a median of 68.

A control group of 200 patients with pulmonary disease other than cancer was made up at random for purposes of comparison.

The first analysis was concerned with testing

TABLE 1.—*Frequency of two-hundred lung cancer cases at Veterans Administration Hospital, Long Beach, by month of birth*

Month	Frequency			Contribution to χ^2 *
	Observed (O)	Per Cent Expected	Expected (E)	
January	20	7.4	14.8	1.827
February	14	7.8	15.6	.164
March	19	8.7	17.4	.147
April	16	7.8	15.6	.010
May	13	8.2	16.4	.705
June	18	7.7	15.4	.439
July	17	8.8	17.6	.020
August	19	9.2	19.4	.008
September	16	8.5	17.0	.059
October	16	9.1	18.2	.266
November	18	8.2	16.4	.156
December	14	8.4	17.0	.529
Totals	200	99.9%	200.8	4.330

* χ^2 (.05, 11) = 19.68.

From the Pulmonary Service, Veterans Administration Hospital, Long Beach, California, and the Department of Medicine, University of California at Los Angeles Center for Health Sciences.

Chief, Pulmonary Service, Veterans Administration Hospital, and associate clinical professor of medicine, University of California at Los Angeles Center for Health Sciences (Hyde); staff statistician, Naval Aviation Safety Center, Norfolk, Virginia; formerly statistician, Veterans Administration Western Research Support Center, Sepulveda, California (Stinson).

Supported in part by funds supplied by the Long Beach Tuberculosis and Health Association.

Submitted August 25, 1964.

the significance of the difference between the distribution of lung cancer cases by month of birth and the distribution to be expected by chance alone. The expected distribution was determined by using the distribution of percentages of total births for each month of 1962 and 1963 as indicated by census data.² The chi-square test of significance was used for this analysis. Table 1 presents these data and the results.

It appears that lung cancer is not related to month of birth in the patient population at the Veterans Administration Hospital at Long Beach.

In the second analysis the lung cancer group of patients was compared with the control group, those not having cancer. The chi-square test of independence was used to determine if month of birth is independent of the occurrence or non-occurrence of lung cancer. The data are shown in Table 2.

A chi-square of 8.446 was obtained. This is not significant; therefore, it can be concluded that the occurrence or non-occurrence of lung cancer is independent of month of birth of patients at Veterans Administration Hospital, Long Beach. Nor was there a significant difference when the months

were grouped and the analysis performed by season of birth.

Pulmonary Service, Veterans Administration Hospital, 5901 East 7th Street, Long Beach, California 90804 (Hyde).

REFERENCES

1. Dijkstra, B. K. S.: Origin of carcinoma of the bronchus, *J. Nat. Canc. Inst.*, 31:511, Sept., 1963.
2. Long Beach Health Department, Long Beach, California, supplied these data.

TABLE 2.—The distribution of 200 lung cancer patients and 200 non-lung cancer patients at Veterans Administration Hospital, Long Beach, according to month of birth

Month	Frequency		Totals	Contribution to χ^2 †
	Lung Cancer	Control		
January	20	20	40	0.000
February	14	17	31	.290
March	19	16	35	.258
April	16	19	35	.258
May	13	15	28	.148
June	18	11	29	1.690
July	17	24	41	1.196
August	19	17	36	.112
September	16	18	34	.118
October	16	17	33	.030
November	18	8	26	3.846
December	14	18	32	.500
Totals	200	200	400	8.446

† χ^2 (.05, 11) = 19.68.

